

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed November 22, 2002 (the "Office Action"). In the Office Action, the Examiner rejected Claims 1-5, 8-11 and 13-15 and objected to Claims 6, 7 and 12. Applicants add new Claims 17-20. Claims 1-20 are now pending in the Application. Applicants respectfully request reconsideration and favorable action in this case.

Claim 16

The Examiner did not address Claim 16 in the Office Action but allowed Claim 16 in an Advisory Action mailed July 16, 2002. Applicants respectfully submit that Claim 16 remains allowable in this Application.

IDS

An Information Disclosure Statement (the "IDS") was filed on August 7, 2002 and retransmitted to the PTO in the Request for Continued Examination filed on August 22, 2002. The Examiner has not indicated that the references disclosed in the IDS were considered. Applicants request confirmation that such references have been considered by the Examiner.

Telephone Conference

Applicants, specifically Chad C. Walters (Reg. No. 48,022), discussed Claims 1 and 10 with Examiner Chuck O. Kendall on September 18, 2002 via telephone conference. No agreement with respect to Claims 1 or 10 was reached in the telephone conference.

New Claims

Applicants add new Claims 17-20. Claims 17-20 contain no new matter and are fully supported by the specification as filed.

Applicants respectfully submit that Claims 17 and 19 are allowable over the prior art, because the prior art does not disclose, teach or suggest identifying incidents that output data within the source code of applications of the legacy computer system.

Applicants further submit that Claims 18 and 20 are allowable over the prior art, because

the prior art does not disclose, teach or suggest that the incidents that output data comprise report commands.

Therefore, Applicants respectfully request allowance of new Claims 17-20.

Rejections Under 35 U.S.C. 103 - Kelliher/Eager

The Examiner rejects Claims 1-4 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,857,194 issued to Kelliher et al. ("Kelliher") in view of U.S. Patent No. 5,960,200 issued to Eager et al. ("Eager"). Applicants respectfully traverse these rejections for the reasons discussed below.

1. Claim Limitations Not Met

The *Kelliher-Eager* combination does not disclose, teach or suggest the claimed aspects of Applicants' invention. For example, Claim 1 includes the step of "identifying incidents of applications of the legacy computer system that output data." The Examiner states that *Eager* discloses this element in claim 18. *See Office Action*, page 2. Specifically, in claim 18 *Eager* discloses "obtaining the identified outputs from the legacy applications from a list of action items." *See Eager*, col. 34, lines 26-27. However, as stated above, Claim 1 includes identifying incidents of applications of a legacy computer system that output data. A distinction exists between identifying outputs, as disclosed in *Eager*, and identifying incidents that output data, as recited in Claim 1. Thus, the mere disclosure in *Eager* of "identified outputs" does not provide support for identifying incidents that output data. Therefore, the Examiner has not cited support in *Eager* for, nor does *Eager* disclose, teach or suggest, "identifying incidents of applications of the legacy computer system that output data."

Claim 1 also includes the step of "defining a control flow graph of the output incidents." The Examiner states that *Kelliher* discloses "defining a control flow graph of the output incidents. [6:15-24, see control flow and out put generator]." *See Office Action*, page 2. Applicants respectfully submit that *Kelliher* does not disclose, teach or suggest defining a control flow graph of the output incidents of applications of a legacy computer system. The mere disclosure of a control flow analyzer in *Kelliher* does not provide support for defining a control flow graph of output incidents. The control flow analyzer 31 of *Kelliher* merely identifies key

data fields and formulates an extraction order for selected data fields found on the data storage device 13. *See Kelliher*, col. 6, lines 6-22. To perform its task, the control flow analyzer of *Kelliher* analyzes a clean field map which is produced by a map refining device. *See Kelliher*, col. 2, lines 24-28. The map refining device produces the clean field map from a raw map produced by a data locator searching a storage device of the legacy system. *See Kelliher*, col. 2, lines 19-26. Thus, *Kelliher* is analyzing a data storage device of the legacy system and producing a clean map from which a control flow analyzer identifies key fields. The key fields help to formulate an extraction order for data fields on the data storage device. Nowhere does *Kelliher* disclose, teach or suggest defining a control flow graph of the incidents of applications of the legacy computer system that output data .

Therefore, for the reasons stated above, Applicants respectfully request that the rejection of Claim 1 be withdrawn.

Claims 2-4 each depend from independent Claim 1. Therefore, Applicants respectfully submit that Claims 2-4 are patentable over the cited art, for example, for the same reasons discussed above with regard to Claim 1 and request that the rejections to Claims 2-4 be withdrawn.

2. No Proper Basis for Modification

The rejection of Claims 1-4 is improper at least because the proposed combination of *Kelliher* and *Eager* is improper. To establish a *prima facie* case of obviousness, an Examiner must show, among other things, some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2142.

The Examiner's proposed combination of *Eager* and *Kelliher* is inappropriate. The Examiner states that "it would have been obvious" to combine *Eager* with *Kelliher* because "identifying output statements during Legacy application modeling or transition makes transitioning to the newer architecture more efficient." *See* Office Action pages 2-3. *Eager* is directed to a system to transition an entire business enterprise to a distributed infrastructure, such

as a multi-tiered client/server target architecture. *See Eager*, col. 2, lines 16-18. However, *Kelliher* is directed towards a system that works on an existing legacy system, such as a Physician's Office Management System (POMS), and automatically determines the data format of a storage device of the existing legacy system, extracts data required by a service company, such as an insurance company, and transmits the data in one of several predetermined industry standard formats. *See Kelliher*, col. 2, lines 10-16. There is no explicit or implicit reference in *Kelliher* to transitioning from one business enterprise to a distributed infrastructure. Since *Kelliher* is merely an extraction process for data in a legacy system and does not relate to transitioning from one business enterprise to a distributed infrastructure, there is nothing to motivate one of ordinary skill in the art to make the proposed combination. For at least this reason, Applicants respectfully submit that the *Kelliher-Eager* combination is improper and therefore does not render Claims 1-4 unpatentable over *Kelliher* in view of *Eager*.

Rejections under 35 U.S.C. §103 - Kelliher/Eager/Meltzer

Claims 5, 8-11 and 13-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Kelliher* in view of *Eager* and further in view of U.S. Patent No. 6,125,391 issued to Meltzer et al. ("*Meltzer*"). Applicants traverse these rejections for the reasons discussed below.

The prior art as cited by Examiner does not disclose, teach or suggest each element of Claims 5, 8 or 9. Claims 5, 8 and 9 each depend from Claim 1. The Examiner implies that *Kelliher* in view of *Eager* discloses all elements of Claims 5, 8 and 9 that are included in Claim 1. However, as discussed above with regard to Claim 1, the proposed combination of *Kelliher* and *Eager* is improper. Furthermore, as discussed above even if such combination is considered proper, the *Kelliher-Eager* combination still does not disclose, teach or suggest "identifying incidents of applications of the legacy computer system that output data" or "defining a control flow graph of the output incidents."

Moreover, Claim 5 includes "plural nodes having associated arcs, each node associated with an output incident." The Examiner states that *Meltzer* discloses "plural nodes having arcs in a legacy system." *See* Office Action, page 4. The Examiner cites column 2, lines 55-56 of *Meltzer* which discloses a "node in the commerce network [establishing] an interface for transactions...." However, the Examiner has not cited any support in *Meltzer* for plural nodes

having associated arcs, each node associated with an output incident, nor does *Meltzer* disclose, teach or suggest these elements.

Claim 8 includes "associating the incidents with an Extensible Markup Language schema; and creating a specification to modify the legacy computer system applications to provide output in Extensible Markup Language format." The Examiner states that *Meltzer* discloses these elements. *See* Office Action, page 4. However, the Examiner has not cited any support in *Meltzer* for these elements. Nor does *Meltzer* disclose, teach or suggest these elements.

Therefore, for at least the reasons stated above, Applicants respectfully request that the rejections of Claims 5, 8 and 9 be withdrawn.

The prior art as cited by the Examiner does not disclose, teach or suggest each element of Claim 10. Claim 10 includes "a modeling engine interfaced with the legacy computer system, the modeling engine operable to analyze an application loaded on the legacy computer system to identify incidents within the application that output data from the legacy computer system" and "a control flow graph of the output operations within the applications." The Examiner implies that the proposed combination of *Kelliher* and *Eager* discloses all the limitations of Claim 10 as applied in Claim 1 except for the disclosure of a modeling engine. *See* Office Action, pages 4-5. However, as discussed above with regard to Claim 1, the proposed combination of *Kelliher* and *Eager* is improper. Furthermore, as discussed above even if such combination is considered proper, the *Kelliher-Eager* combination still does not disclose, teach or suggest a modeling engine operable to identify incidents within an application loaded on a legacy computer system that output data, nor does the *Kelliher-Eager* combination disclose teach or suggest a control flow graph of the output operations within the applications.

Furthermore, the Examiner states that *Meltzer* discloses a "similar apparatus" to the modeling engine of Claim 10. The Examiner cites an "Element generator and attribute Generator" of Figure 5 of *Meltzer* as support. *See* Office Action, page 5. Applicants respectfully disagree with the Examiner's assertion. *Meltzer* discloses "[a]n element event generator 504 [that] is a specialized ESIS listener which is also an XML event generator." *See Meltzer*, col. 27, lines 12-13. *Meltzer* discloses an "attribute event generator 505 [that] supplies the attribute event

objects to attribute listeners 505A." *See Meltzer*, col. 27, 58-60. These elements are not modeling engines. Thus, the Examiner has failed to cite any teaching in *Meltzer* or other art of a modeling engine.

Therefore, for at least the reasons stated above, Applicants respectfully request that the rejections to Claim 10 be withdrawn.

Claims 11 and 13-15 each depend from independent Claim 10. Therefore, Applicants respectfully submit that Claims 11 and 13-15 are patentable over the cited art, for example, for the same reasons discussed above with regard to Claim 10 and request that the rejections to Claims 11 and 13-15 be withdrawn.

Claim Objections

The Office Action Summary indicates that Claims 6, 7 and 12 are "objected to." However, the Office Action does not include any detailed remarks concerning the nature of such objections. Applicants note that in the Office Action mailed April 23, 2002, the Examiner indicated that Claims 6, 7 and 12 would be allowable if rewritten in independent form, including all the elements of the base claim and any intervening claims. Applicants respectfully submit that Claims 6, 7 and 12 are allowable as depending from allowable Claims 1 and 10.

CONCLUSION

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request reconsideration and full allowance of all pending claims.

No fee is believed to be due. However, the Commissioner is hereby authorized to charge any deficiency or credit any overpayments to Deposit Account No. 05-0765 of Electronic Data Systems Corporation.

Respectfully submitted,

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MARKED-UP VERSION OF CLAIM AMENDMENTS

For the convenience of the Examiner, all claims have been presented whether or not an amendment has been made. The Claims have been amended as follows:

1. A method for modeling a legacy computer system comprising:
identifying incidents of applications of the legacy computer system that output data;
and
defining a control flow graph of the output incidents.

2. The method of Claim 1 further comprising:
identifying the value or type of the data fields associated with each output incident;
and
attaching the value or type to the control flow graph.

3. The method of Claim 2 wherein identifying the value or type further comprises:
identifying output incidents of invariant data fields; and
attaching the value of each invariant data field to its associated control flow graph
incident.

4. The method of Claim 2 wherein identifying the value or type further comprises:
identifying output incidents of variant data fields; and
attaching the type of each variant data field to its associated control flow graph
incident.

5. The method of Claim 1 wherein the control flow graph comprises:
plural nodes having associated arcs, each node associated with an output incident.

6. The method of Claim 5 wherein a complete control flow graph of the application (N,A) is used to compute a directed graph (N_R, A_R) wherein:

n comprises a node in N_R if n, an element of N, starts an output process, stops an output process or outputs data; and

<n₁, n_m> comprises an arc in A_R if n₁ and n_m are in N_R and a sequence of arcs <n₁, n₂, n₃, . . . , n_{m-1}, n_m> is in A such that for i from 2 to m-1, n_i is not in N_R.

7. The method of Claim 6 further comprising:

defining the control flow graph as a formal grammar that describes the flow paths from each start command to the associated stop commands.

8. The method of Claim 1 further comprising:

associating the incidents with an Extensible Markup Language schema; and

creating a specification to modify the legacy computer system applications to provide output in Extensible Markup Language format.

9. The method of Claim 8 further comprising:

automatically modifying the legacy computer system applications in accordance with the specification.

10. A system for modeling an output application of a legacy computer system comprising:

a modeling engine interfaced with the legacy computer system, the modeling engine operable to analyze an application loaded on the legacy computer system to identify incidents within the application that output data from the legacy computer system; and

a control flow graph of the output operations within the applications.

11. The system of Claim 10 wherein the control flow graph comprises plural nodes, each node associated with an output incident.

12. The system of Claim 11 wherein a complete control flow graph of the application (N, A) is used to compute a directed graph (N_R, A_R) wherein:

n comprises a node in N_R if n , an element of N , starts an output process, stops an output process or outputs data; and

$\langle n_1, n_m \rangle$ comprises an arc in A_R if n_1 and n_m are in N_R and a sequence of arcs $\langle n_1, n_2 \rangle, \langle n_2, n_3 \rangle, \dots, \langle n_{m-1}, n_m \rangle$ is in A such that for i from 2 to $m-1$, n_i is not in N_R .

13. The system of claim 10 wherein the control flow graph of the output operations comprises as a formal grammar that describes the flow paths from each start command to the associated stop commands.

14. The system of Claim 10 further comprising a graphical user interface in communication with the modeling engine, the graphical user interface operable to display the control flow graph formal grammar and the incidents.

15. The system of Claim 14 wherein the graphical user interface further communicates with a mapping engine and an Extensible Markup Language schema, the mapping engine operable to map the incidents of the applications with the control flow graph formal grammar and the Extensible Markup Language schema.

16. A method for modeling a legacy computer system comprising:
defining a control flow graph of output incidents of applications of a legacy computer
system;

wherein the control flow graph comprises plural nodes having associated arcs, each
node associated with an output incident; and

wherein a complete control flow graph of the application (N, A) is used to compute a
directed graph (N_R, A_R) wherein:

n comprises a node in N_R if n , an element of N , starts an output process, stops
an output process or outputs data; and

$\langle n_1, n_m \rangle$ comprises an arc in A_R if n_1 and n_m are in N_R and a sequence of arcs $\langle n_1,$
 $n_2 \rangle, \langle n_2, n_3 \rangle, \dots, \langle n_{m-1}, n_m \rangle$ is in A such that for i from 2 to $m-1$, n_i is not in N_R .

Please add the following claims:

-- 17. (New) **The method of Claim 1, wherein identifying incidents of applications
of the legacy computer system comprises identifying incidents of applications of the legacy
computer system within the source code of the applications.**

18. (New) **The method of Claim 17, wherein the incidents comprise report
commands.**

19. (New) **The system of Claim 10, wherein the modeling engine is operable to
identify the incidents within the source code of the application.**

20. (New) **The system of Claim 19, wherein the incidents comprise report
commands. --**